

ESTABLISHING PASTURES IN A SALINE SCALD – TAYLOR’S FLAT, NEAR BOOROWA

SUSTAINABLE GRAZING ON SALINE LANDS

Case study – Taylor’s Flat

**LANDHOLDERS: IAN AND YVONNE DOCKETT
TAYLORS FLAT NEAR BOOROWA**

QUICK FACTS

Area of site: 2 ha

Soil texture: medium clay

Soil salinity (EC_e): at the surface (0–10 cm) ranges from 0.3 to 17 dS/m. At depth (50–100 cm) ranges from 1 to 7 dS/m

Sodicity: Extreme, with ESP readings as high as 60% (≥14% is classed as strongly sodic)

The problem

The landholders wanted to establish pasture on some very difficult country that was saline and prone to erosion and had been a problem for some time. Watertables tend historically to rise here in winter. All springs on the site are brackish.

In February 2004, the dominant plant species were sea barley grass, couch, some rushes and annual beard grass, all of which are salt tolerant. The site was dry. A creek runs through the middle of the site, with salt scalds on either side.

Ian and Yvonne wanted to identify the species that grew successfully, then use those species and sow them on more salt patches on the property.

Actions taken at the site

Before sowing there was a light to medium infestation of wiregrass and a heavy infestation of capeweed. There was also a heavy infestation of cut and sword rushes.

2005

The rushes were spot sprayed in August, September and October 2005. Capeweed was sprayed in November 2005. There was no cultivation before sowing.

2006

Sowing was in early May 2006. Ian says it is too risky to sow before then, plus cool weather follows at this time, reducing evaporation. In spring you will often get bogged. Soil moisture levels at sowing were low. The species sown were:

- Advance fescue
- Atom prairie grass
- Balansa clover
- chickory
- puccinellia
- Riverina sub clover
- Shaftal Persian clover
- strawberry clover
- tall wheatgrass
- Tekapo cocksfoot
- Victorian rye grass
- Wintergraze lucerne.



Before: The site in November 2004. Note the scalded areas in the foreground.



Direct-drilling the pasture with a chisel plough in May 2006. As far as possible, sowing was across the slope.

Yvonne Dockett

Yvonne Dockett

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Most (75%) of the area was sown at 9 kg/ha with 130 kg/ha Granulock®. A smaller (25%) area was sown at 6 to 7 kg/ha with 125 kg/ha Mo Super (molybdenum-fortified single superphosphate).

It was direct drilled with a chisel plough at 27.5 cm row spacing.

Results

2006

The pasture emerged about 3 weeks after sowing.

Later in the year, pastures growing included puccinellia, tall wheatgrass, phalaris, clover, ryegrass, lucerne, and some chickory. Some weeds were present: capeweed, sea barley grass and Patterson's curse. There was good ground cover, including these weeds.

2007

In March 2007 Ian reported that the pasture was best in the 'worst' parts of the salt (where white salt was visible on the ground).

From mid January 2007 to mid March, the area was grazed at 3.7 lambs/ha. It also had six cows and calves from mid February to mid March 2007 on about 16 ha.



Yvonne Dockett

The pasture in March 2007. This photo shows about an average result for the site. Ian estimated that the ground cover was 40%, compared with zero before.



Yvonne Dockett

In March 2007 this tall wheatgrass patch growing in a damp spot represented one of the best pasture results on the site.



Yvonne Dockett

Ian was pleased that some of the best pasture results were in the zones where the salt looked worst.

Final comments from the landholder

In March 2007, Ian and Yvonne said that:

Considering the season we are terribly pleased with the way the pasture turned out. We have a good strike of all the pasture species. The pasture seems to be best where the salt looks worst (where white salt is visible on the ground).

We let the pasture go to head and seed down till mid January 2007. We stocked it lightly from then until mid March, when we removed stock to let the young growth re-seed. We have invested a lot in this paddock now, so we will do everything to look after it.

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Industry & Investment NSW*

Acknowledgments

NSW Salt Teams.

APPENDIX

Rainfall during the trial (mm) (average annual rainfall = 619 mm) (2005 and 2007 SILO figures for Rugby, NSW)

	Jan	Feb	Mar	Apr	May	Jun
2005	16	68	28	7	1	107
2006	84	8	8	8	2	36
2007	19	55	30	78	48	97

	Jul	Aug	Sep	Oct	Nov	Dec	Total
2005	90	74	137	77	104	37	747
2006	54	23	37	1	21	45	311
2007	45	30	7	18	136	124	688

Surface (0–10 cm) soil characteristics (late summer 2004)

Good patch ^B	Bad patch ^B	Bulk ^A
pH at surface (CaCl₂)		
4.5	8.1	5.6
Salinity, late summer (est. EC_e dS/m)		
7.9	11.5	13.9
Organic carbon %		
2.9	0.73	1.3
Sulfate sulfur (KCl) mg/kg		
150	410	820
Phosphorus (Colwell) mg/kg		
14	12	10
CEC meq/100 g		
13	17.1	17.8
Ca/Mg ratio		
0.21	0.22	–
Sodicity ESP %		
40	53	62

^A Samples used for measurements were taken from at least six holes (0–10 cm deep) made in locations with a range of salinity symptoms (visually assessed).

^B Samples used for measurements were taken from one hole (0–10 cm deep) made in a location with no salinity symptoms and one in a location with extreme salinity symptoms (visually assessed).

Notes:

CEC, cation exchange capacity

ESP, exchangeable sodium percentage

Salinity: Non-saline 0 to <1.5 dS/m; saline >1.5 dS/m.

Sodicity: Non-sodic, ESP <6%; sodic 6%–14%; strongly sodic >14%.

For further information, see the *Glove Box Guide to Salinity* (NSW DPI) for your part of NSW, on the page headed 'Soil testing for salinity and sodicity'.

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